Remarks

Applicants have amended Claims 1-7. Applicant respectfully submits no new matter has been added by the present amendment. Support for the amendment can be found generally throughout the text, specifically at page 6, lines 6-14 and the Examples.

Applicants have amended the Title of the Specification at page 1, lines 1 and 2 to correct a typographical error.

Claim Objection

Claims 2-4, 5 and 7 stand objected, Applicants have amended Claims 2-4, 5 and 7 as requested in the Office Action and accordingly request withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 112

Claims 2 and 3 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended Claims 2 and 3 to provide sufficient antecedent basis for the limitation of the Mooney viscosity claimed in Claims 2 and 3 and accordingly request withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Aonuma et al (US Patent No. 5,432,226). Applicants respectfully traverses this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML

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1+4 @ 100° C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent.

Applicants submit Aonuma et al does not teach each and every element of the claimed invention. Aonuma et al discloses rubber formulations containing HNBR, an organopolysiloxane, a crosslinking controller, a triallyl isocyanate, optional filler and a peroxide crosslinking agent. According to Aonuma et al, suitable HNBR's have a Mooney up to 70. Aonuma et al does not exemplify an HNBR having the claimed low Mooney and polydispersity index.

Whereas the present invention is directed to composites comprising low Mooney, optionally hydrogenated polymers. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention is directed to polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent.

Therefore, Applicants submit the Aonuma et al fails to teach each and every element of the claimed invention and accordingly Applicants request withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fujii et al (WO 97/36956 believed to correspond to US Patent No. 6,489,385). Applicants respectfully traverse this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a polymer composite consisting of at least

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one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent.

Applicants submit Fujii et al does not teach each and every element of the claimed invention. Fujii et al discloses a nitrile containing copolymer rubber having a Mooney viscosity lowered via high shear in the presence of an aging inhibitor. According to Fujii et al, the rubber has a Mooney viscosity of 5-35 and a molecular weight distribution of 3-5.

Whereas the present invention is directed to composites comprising low Mooney, optionally hydrogenated polymers. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention is directed to a polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent.

Therefore, Applicants submit the Fujii et al fails to teach each and every element of the claimed invention and accordingly Applicants request withdrawal of this ground of rejection.

Claim Rejection under 35 U.S.C. § 102(b)

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Obrecht et al (US Patent No. 5,395,891). Applicants respectfully traverse this ground of rejection.

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Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicant submits the present invention is directed to polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100° C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent.

Applicants submit Obrecht et al does not teach each and every element of the claimed invention. Obrecht et al discloses mixtures of polybutadiene gel and other rubber mixtures containing carbon-carbon double bonds having a Mooney viscosity of between 10-150. Suitable other rubber mixtures containing carbon-carbon double bonds includes a wide variety of compounds including butyl rubber, EPDM, NR, polyisosnrene, SBR, etc. and HNBR. Obrecht et al. does not exemplify any HNBR compounds having the disclosed Mooney.

Whereas the present invention is directed a polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100° C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent. The low Mooney optionally hydrogenated polymers of the composite of the present invention are prepared via a metathesis reaction in the presence of a metathesis catalyst. Accordingly, the present invention includes at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7.

Applicants submit the Obrecht et al fails to teach each and every element of the claimed invention and, accordingly, Applicants request withdrawal of this ground of rejection.

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Claim Rejection - 35 USC § 103(a)

Claims 6-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii et al in view of Rau, et al. (U.S. Patent No. 6,187,867). Applicants respectfully traverse this ground of rejection and incorporates the comments from above. Applicants respectfully submit that "in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claims limitations. The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure." See MPEP § 2142, citing In re Vaeck, 947 F.2d 488, 20 USPQ 2d. 1438 (Fed. Cir. 1991).

Applicants submit Fujii et al in view of Rau et al. does not render the present invention obvious. As discussed in detail above, Fujii et al **does not** teach each and every element of the claimed invention. Fujii et al discloses a nitrile containing copolymer rubber having a Mooney viscosity lowered via high shear in the presence of an aging inhibitor. According to Fujii et al the rubber has a Mooney viscosity of 5-35 and a molecular weight distribution of 3-5.

Whereas the present invention is directed a polymer composite consisting of at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7, at least one filler and optionally at least one cross-linking agent. Accordingly, Applicants submit Fujii et al does not suggest the present invention.

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Further, Applicants submit the deficiencies of Fujii et al are not overcome by combination with Rau et al. Rau et al. merely discloses rubber compositions comprising nitrile rubber and discloses use thereof in automobile belts, etc. Rau et al. does not suggest a composite as claimed comprising an optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30 and a polydispersity index of less than 2.7.

Accordingly, Applicants submit the combination of Fujii et al and Rau et al. does not teach or suggest the present invention. Therefore, Applicants request withdrawal of this ground of rejection.

Provisional Claim Rejection (I)

Claims 1, 6 and 7 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 12, 16 and 17 of co-pending Application No. 10/728,029. Applicants respectfully traverse this provisional rejection.

Further, both the present application and Application No. 10/728,029 are pending, allowable subject matter, not withstanding the provisional obviousness-type double patenting rejection has not been indicated in either application. Where a provisional rejection under the judicially created doctrine of obviousness-double patenting is made between two applications, MPEP § 804(I)(B) states that "if the provisional double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the provisional double patenting rejection in the other application into a double patenting rejection as the time the one application issues as a patent." Therefore, it is not evident which of the pending applications will become allowable first, and any action by Applicants with regard to this provisional rejection is premature.

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The Office Action also states that Claims 12, 16 and 17 are directed to the same invention of Claims 12, 16 and 17 of co-pending Application No. 10/728,029. Applicants traverse this statement and submits the inventions were commonly owned at the time the invention in this application was made as illustrated by the assignment documents from co-pending Application No. 10/728,029 submitted in Appendix 1. Accordingly, Applicants submit that the assignee is the owner of all the claimed subject matter.

Provisional Claim Rejection (II)

Claims 2-5 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 13 and 14 of co-pending Application No. 10/728,029. Applicants respectfully traverse this provisional rejection.

Further, both the present application and Application No. 10/728,029 are pending, allowable subject matter, not withstanding the provisional obviousness-type double patenting rejection has not been indicated in either application. Where a provisional rejection under the judicially created doctrine of obviousness-double patenting is made between two applications, MPEP § 804(I)(B) states that "if the provisional double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the provisional double patenting rejection in the other application into a double patenting rejection as the time the one application issues as a patent." Therefore, it is not evident which of the pending applications will become allowable first, and any action by Applicants with regard to this provisional rejection is premature.

The Office Action also states that Claims 2-5 are directed to an invention not patentably distinct from Claims 13 and 14 of commonly assigned co-pending

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Application No. 10/728,029. Applicants traverse this statement and submits the inventions were commonly owned at the time the invention in this application was made as illustrated by the assignment documents from co-pending Application No. 10/728,029 submitted in Appendix 1. Accordingly Applicants submit that the inventions were commonly owned at the time the invention in this application was made and therefore a rejection under 35 U.S.C. § 103(a) based upon the commonly assigned cases as a reference under 35 U.S.C. § 102(f) or (g) or (e) for applications filed on or after November 29, 1999 is precluded.

Provisional Claim Rejection (III)

Claims 1-7 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-7 of co-pending Application No. 10/648,867. Applicants respectfully traverse this provisional rejection.

Further, both the present application and Application No. 10/648,867 are pending, allowable subject matter, not withstanding the provisional obviousness-type double patenting rejection has not been indicated in either application. Where a provisional rejection under the judicially created doctrine of obviousness-double patenting is made between two applications, MPEP § 804(I)(B) states that "if the provisional double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the provisional double patenting rejection in the other application into a double patenting rejection as the time the one application issues as a patent." Therefore, it is not evident which of the pending applications will become allowable first, and any action by Applicants with regard to this provisional rejection is premature.

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The Office Action also states that Claims 1-7 are directed to an invention not patentably distinct from Claims 1-7 of commonly assigned co-pending Application No. 10/648,601. Applicants submit Application No. 10/648,601 is the pending application and request clarification of the objection stated in Paragraph 13 of the Office Action.

Respectfully submitted,

By _____
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APPENDIX I

POS-1137

WORLD-WIDE ASSIGNMENT

In consideration of One Dollar and other good and valuable consideration, the receipt whereof is hereby acknowledged, we,

CHRISTOPHER M. ONG, a Canadian citizen;
FRÉDÉRIC GUÉRIN, a Canadian citizen; and
SHARON X. GUO, A Canadian citizen;
all c/o Bayer Inc., Sarnia, Ontario, Canada N7T 7M2,

do hereby sell, assign and transfer to BAYER INC., a Corporation duly incorporated under the laws of Canada, having its principal place of business at the City of Toronto, in the Province of Ontario, Canada M9W 1G6, its successors and assigns, all our rights, title and interest in and to our invention entitled

"PROCESS FOR THE PREPARATION OF LOW MOLECULAR WEIGHT HYDROGENATED NITRILE RUBBER"

in Canada and in and for all other countries of the world, for which an application was filed in Canada the 5th day of December, 2002 under application serial no. 2,413,607 and any nationalizations, improvements, additions or amendments thereon included in corresponding applications filed in any country.

We further undertake to execute without further consideration all lawful papers, all divisional, continuing and reissue applications, make all rightful oaths, and generally do everything possible to assist and enable the said BAYER INC., its successors, assigns and nominees, to obtain and enforce proper patent protection for the said invention.

This indenture shall be binding upon and enure to the benefit of the heirs, executors, administrators, successors and assigns, respectively, of the parties hereto.

In witness whereof I have hereunto set my hand and seal this 14 day of October, 2003.

Christopher M. Ong

BEFORE ME this 14 day of October, 2003, personally appeared CHRISTOPHER M. ONG who acknowledged to me that he signed the above Assignment of his own free will and for the purposes therein set forth.

Notary Public

MARK JAMES HERSEY, a Notary Public, County of Lambton, limited to the attestation of instruments and the taking of affidavits for Bayer Inc.

In witness whereof I have hereunto set my hand and seal this 14 day of October, 2003.

Frédéric Guérin

BEFORE ME this 14 day of October, 2003, personally appeared FRÉDÉRIC GUÉRIN who acknowledged to me that he signed the above Assignment of his own free will and for the purposes therein set forth.

Notary Public

MARK JAMES HERSEY, a Notary Public, County of Lambton, limited to the attestation of instruments and the taking of affidavits for Bayer Inc. Expires July 23, 2006.

In witness whereof I have hereunto set my hand and seal this 17th day of Oct., 2003.

Sharon X. Guo

BEFORE ME this 17 day of October, 2003, personally appeared SHARON X. GUO who acknowledged to me that she signed the above Assignment of her own free will and for the purposes therein set forth.

Notary Public

MARK JAMES HERSEY, a Notary Public, County of Lambton, limited to the attestation of instruments and the taking of affidavits for Bayer Inc. Expires July 23, 2006.